

SURVEY FORM INSTRUCTIONS

Thurston County Wetlands Amphibian Egg Mass Surveys

These are the instructions for the two-page Thurston County Wetlands survey form.

GENERAL INSTRUCTIONS: Parts of the form will require you to record information for needed items in three ways: writing, selecting choices, and sketching. For the places that require you to write, **PLEASE** print clearly; folks that transcribe the important data you provide have to be able to understand what you wrote. Little room exists in some of the writing slots because of all the items we had to stuff into a two-page form; thus, you will have to write both **CLEARLY** and **SMALL**. For places where you must select a choice, just circle or strike through the correct response. For places where you need to sketch, keep your sketch uncluttered and label it clearly. You need not be an artist to sketch, just keep your sketch understandable.

To keep data quality high, you **MUST** weigh your responses honestly. Several places in the form will ask you to identify selected animals or plants. Identify them where you are confident as to what they are. If you are uncertain about your identification, indicate so. If you know, for example, that the animal you observed belongs to a certain group, but you cannot identify it to species, indicate so. Various levels of data which have different levels of confidence can be used in analyses, and this will not only permit us maximal use of all data collected, but it will allow us to screen data into the appropriate categories. In addition, expert individuals associated with the project may be able to identify selected unknowns (especially plants) at a later time.

The form is conveniently divided into two pages that correspond to what you do when you arrive at the site, which is on the **First Page**; and what you do when you conduct the egg mass survey, which is on the **Second Page**. Do **First Page** tasks first, which involve writing down standard things like date, time, observers, location information, weather conditions, and drawing a sketch map. If the wetland is completely visible from your start point, you sketch the map first before doing the egg mass survey. If the wetland is not completely visible from your start point, you can create your sketch map as you do the egg mass survey. Regardless of the latter, with the possible exception of birds and selected other animals that are likely to be spooked as you arrive (and thus should be recorded when you arrive), **Second Page** survey tasks will come after **First Page** tasks.

CELL-SPECIFIC INSTRUCTIONS: This section describes in detail how to fill out each cell in the survey form. Questions that arise on details can be referred to the Project Facilitator, Merrie Diehl (360) 902-2541, e-mail: diehlmad@dfw.wa.gov or the Project Research Scientist, Dr. Marc Hayes (360) 902-2567, e-mail: hayesmph@dfw.wa.gov.

First Page:

Date: Enter the month (as its first three letters; e.g., September = SEP) and day (as an Arabic numeral; e.g., 6) of survey date so they cannot be confused with one another.

Leader: Enter the name (as first name, middle initial, and last name) of the volunteer leader of the group surveying this site.

Ph: Enter the phone number (including area code) of volunteer leader.

E-mail: Enter the e-mail address of the volunteer leader. Contact information on the volunteer leader is essential to enable those that enter or analyze data to interpret it properly, especially if some item needs to be checked on.

Start Time: Enter start time (on a 24-hr clock; e.g., 2:00 PM = 14:00). Start time is the time at you **arrive** at the survey site, **not** the time at which you begin the survey.

Assisting Observers: Enter the name (as first name, middle initial, and last name) of the one or two observers assisting the volunteer leader. Typically, no more than two other observers will assist. If more than two additional observers assist, the additional names should go in the **Comments** cell at the bottom of the page.

Location: The Project Facilitator will provide you with a Site Number for each of your survey locations. This number will consist of a 13-digit alphanumeric hyphenated into two parts: The first part will have eight digits for the Township, Range, and Section (e.g., Township 18 North, Range 1 West, Section 6 would be written 18N01W06); the second consists of five numbers that are a unique identifier for each wetland that has been mapped by Thurston County.

GPS: Global Positioning System coordinates of the location. You do not have to obtain these coordinates unless you want to as they typically will be added to the forms before or after you have done the survey by someone else. If you are a GPS enthusiast and want to add the GPS coordinates to your surveyed wetland, you can, but you **MUST** use the State Plane x-y coordinate system set at NAD83 (or North American Datum 1983) on your GPS unit. **DO NOT** add GPS coordinates in another system or in any datum except NAD83.

Distance/direction to nearest crossroad: Enter the distance and direction to the nearest crossroad. This should be named roads that someone could recognize (dirt or logging roads do not count; **Note:** You will want to include unnamed roads to clarify access or local geography on your sketch (see **Sketch Map**) even though these are not part of the verbal description of directions). Give the distance to the nearest 0.05 miles ($= \frac{1}{20}$ of a mile; slightly over 250 ft), and write any compass (e.g., north) or joint (e.g., northeast) directions as one (N, E, S, W) or two-letter (NE, SE, SW, NW) capitals.

Distance/direction to nearest named road: Enter the distance and direction to the nearest named road. The distance should be roughly the shortest perpendicular between your surveyed wetland and the named road. Distance and direction information should be recorded as in **Distance/direction to nearest crossroad**.

Ownership: Landowner(s) of the wetland being surveyed. The Project Facilitator will typically provide these data.

Ph: If a contact phone number for landowner(s) exist(s), note it.

Weather conditions: Choose the appropriate selection describing weather conditions.

Sun visible? If the sun is in your line of sight, select yes. If clouds conceal the sun, **even** if the sun shines on terrain some distance away, select no.

Clouds? If any clouds exist overhead, select yes. Select no **only** if no clouds are present. If you select yes, estimate what percentage of the visible sky is clouds the best you can to the nearest 5%.

Precipitation? If precipitation is occurring at the time of the survey, select yes. If you selected yes, indicate **type** and **amount**. Precipitation types should be largely self-explanatory; sleet is rain containing visible ice (usually judged by its behavior on a glass surface). How fast it can soak you determines **amount**; heavy precipitation will

soak you in ≤ 30 seconds, moderate in > 30 seconds to 2 minutes; and light will soak you in > 2 minutes.

Precipitation in last 24 hr? Select **only** if you selected no for **Precipitation?** Indicate yes if evidence of precipitation exists by looking at the substrate; be cautious about surface moister than relates only to dew or surface frost.??

Survey: Record whether this is the 1st, 2nd, 3rd, 4th, or 5th survey of this site. If you are uncertain of which survey of this site you are on, check with the Project Facilitator.

Sketch Map: Sketch a **simple** map of the wetland site on the gridded area on this page. On that map, include:

- (1) the **water margin** of the wetland (as a line). If the water margin cannot be seen, use the line to approximate where wetland vegetation changes to upland vegetation
- (2) **connections** to other waters (also as lines). Indicate especially if the wetland has one or more inflows or outflows. Also use single-headed arrows to indicate the direction of flow (toward or away from the wetland).
- (3) coding of **wetland vegetation** into 4 types: (a) **emergents** – herbaceous vegetation that sticks up above the water surface (examples: bulrushes (*Scirpus* sp.), sedges (*Carex* sp.)); (b) **floating** or **submergents** – vegetation that floats on the surface or is underwater, but does not stick up about the water surface in any significant amounts (examples: pondweeds (*Potamogeton* sp.), water milfoils (*Myriophyllum* sp.)); (c) **shrubs** – short, frequently multi-stemmed woody vegetation (examples: hardhack or Douglas' spirea (*Spirea douglasii*), red-osier dogwood (*Cornus stolonifera*)); and (c) **trees** – tall, frequently single-stemmed woody vegetation (examples: Oregon ash (*Fraxinus latifolia*), Pacific willow (*Salix lasiandra*)). Use a simple coding to designate areas with different vegetation types; for example, you might use dots (·) for emergents, little circles (o) for floating and submergents, x's (x) for shrubs, and an asterisk-like symbol (*) for trees. It is unimportant precisely which symbols you use, as long as they are clearly labeled in a legend so someone can interpret your map. Lastly, you do not need a high density of symbols to designate the different areas; keep your sketch simple, not every tree and shrub need to be indicated, just the general areas grown to shrubs or trees.
- (4) coding of **upland vegetation** into 3 types: (a) **herbaceous** – non-woody vegetation, (b) **shrubs**, and (c) **trees**. Definition of the shrubs and trees categories is the same as for wetland vegetation and you can likewise use the same symbol codes; the latter will simply be placed on the upland side of you wetland line (see (1)). You will need a different code (e.g., hatching) for upland **herbaceous** vegetation.
- (5) **alterations** of the wetland. Note any obvious alterations of the wetland habitat (e.g., part of wetland is seasonally planted in a row crop, drainage canal bisects the wetland) or uses that may contribute alteration (e.g., grazing). If all the wetland is altered, note that in the box below the sketch along with the type of alteration. If a portion of the wetland is altered, show which portion using a dashed line, and note the type of alteration in the box below the sketch.
- (6) information on **survey pattern**. Information on survey pattern should include the point at which you started your survey and survey direction. Designate this with an arrow labeled **start**. The end point should be the same as the start point unless you did not survey the entire wetland. If the end point is the same as the start point, do **not** label it. If the end point differs from your start point, designate it with an arrow

labeled **end**. For survey direction, use at least one, but no more than two arrows each labeled **direction** to indicate the direction in which you moved around the wetland.

- (7) indicate the **general amphibian egg mass areas** with a dotted line. Do the survey according to the instructions on the **Second Page** before mapping this on your sketch. You should not be mapping individual egg masses, only the general areas where you found egg masses. If egg masses were found all around the wetland, not in specific areas, do **not** map, but write that down in the box below the sketch.

Other information. If you feel that other information (is, might be..)important to understanding this wetland that we are excluding, note it in the box below the sketch.

Is exotic vegetation present? Select yes or no if you have experience with recognizing which species are exotic; if you lack experience, select unknown. If you select yes, note which species. If it is one or more of the four common exotics noted, circle or strike through the selection. If it is other than these four, circle or strike through other, and write the species represented if you can identify it. If you know it is exotic, but cannot identify it, write unknown. If it is feasible to pick up a sample of the unknown exotic for identification, collect a sample. Samples should **not** be collected if they cannot be examined for identification **within three days**. Collected samples should be placed in a sealed Ziploc bag without water and stored in a refrigerator until they can be examined. If seeds, seed heads, or the flowering parts of the plant are available, try to get some of those in the sample as these are frequently useful in identification. If you want to try your hand at identification of wetland plants, you can use the following books:

Cooke, S.S.(editor). 1997. A field guide to common wetland plants of western Washington and northwestern Oregon. Seattle Audubon Society, Seattle, WA.

Guard, B.J. 1995. Wetland Plants of Oregon and Washington. Lone Pine Publishing, Redmond, WA.

Or an excellent plant identification website: <http://plants.usda.gov/> .

Even if you think you have identified your wetland species correctly, you should have it verified by an experienced person if you have limited experience with identification.

Comments: This area is for overflow from places on the form where you did not have enough room, or for additional things that you think ought to be added, but are not described on the form.

Second Page:

Date: See directions on **First Page**.

Site Number: See directions on **First Page** under **Location**.

Start Time: This is the start of your egg mass survey on a 24-hr clock (e.g., 7:00 AM = 07:00). It is **not** the time you arrive at the site. The time you arrive at the site should go on the **First Page** under **Start Time**.

[Important Note: When conducting your survey, always have a fixed start point. Do not forget to map it (see **First Page** under **Sketch Map** under (6)). Survey in a slow walk around the wetland at all water depths up to 24 inches (2 feet) looking for egg masses. The walk should be systematic, meaning that you should plan the course of your walk around the wetland in a manner that the entire area at water depths up to 2 feet of depth is

visually surveyed. To do this, you may have to walk back and forth between the shore or water line and the 2 foot depth mark until you have gone all the way around the wetland. Group leaders should help spread assisting observers out in a systematic pattern so that a larger area of wetland can be covered in a shorter period of time. Remember that you do not want to have observers spread too far apart so that the person in charge of data recording is unable to write it down without having to move around. Plan your movements through the wetland to minimize disturbance, as egg masses can be knocked loose from braces to which they are attached.]

Species with large egg masses (AMGR, RAAU, RAPR, and BUBO): This consists of four possible species, **northwestern salamander** (AMGR), **northern red-legged frog** (RAAU), **Oregon spotted frog** (RAPR), and **Western toad** (BUBO). AMGR, RAAU, and RAPR have egg masses that range from the size of a small orange to a size greater than a large grapefruit, whereas BUBO have long strings of egg masses that can be easily found in shallow water. Because of the large egg mass size, you will count all egg masses for these species. Northwestern salamander and northern red-legged frog egg masses are invariably attached to a brace (some kind of vegetation, branches, or sticks) in water typically deeper than 8 in (20 cm). In contrast, Oregon spotted frog egg masses are typically unattached, often in groups touching each other in water less than 6 in (15 cm) deep. Western toad egg masses consist of long narrow strings of dark eggs that can usually be found in shallow water shelves (< 8 in deep). Refer to our website guide in egg mass identification to assist you in reviewing the differences between egg masses of these four species. In most places you survey, you will probably run across northwestern salamander and northern red-legged frog egg masses as both these species are relatively common. In contrast, Oregon spotted frogs are a state-level endangered species currently known from only 5 sites in Washington State. So if you happened to encounter larger, unattached egg masses in groups in very shallow water, you should **definitely** notify the Project Facilitator so that species identification can be verified. Note that a grid numbered 1 to 10 is available for you to keep track of the number of egg masses in each of the 10 areas you divide your wetland into. This is mostly to help you so you do not have to keep the egg mass count for each species in your head through the entire survey of the wetland. Sum the egg mass count for each species from each of the 10 areas record in the column labeled **Total**.

Species with small egg packets (AMMA and HYRE): This consists of two species: **long-toed salamander** (AMMA) and **Pacific treefrog** (HYRE). Both species attach their eggs in small, irregular groups or packets that are no bigger than the diameter of a mandarin orange or tangerine. Egg of both species are difficult to distinguish in the early embryonic stages. In general, Pacific treefrog eggs are smaller (no more than 1 mm (< $\frac{1}{16}$ in) in diameter), gray above and dingy yellow below, and usually more numerous (20-80) per packet. In comparison, long-toed salamander eggs are larger (~2 mm (almost $\frac{1}{8}$ in) in diameter), dark brown above and nearly white below, and usually less numerous (2-25) per packet. In addition, long-toed salamander typically deposit eggs earlier than the Pacific treefrog, so you will observe an interval of time after the first eggs are deposited when only long-toed salamander egg packets can be found. However, both species are easiest to tell apart in their later embryonic stages. Long-toed salamanders retain long, visible gills and have two long, thin structures with a knob on their ends extending from their chins called balancers. The balancers are as

long or slightly longer than their gills. In contrast, Pacific treefrog embryos that are near hatching lack visible gills (the gills are close over by skin that covers the body) and they also lack balancers that stick out from the body. Basically, a Pacific treefrog late-development embryo has a rounded body with a tail, but lacks any other obvious structures sticking out from its body. Refer to our website guide in egg mass identification to assist you in reviewing the differences between egg masses and the later embryonic life stages of these two species. Realize that both the treefrog and salamander often lay packets next to one another on the same attachment braces, so you may have to wiggle the jelly of adjacent packets to recognize which one is different. Upon completing the wetland survey, estimate the egg packet numbers for each species from the entire wetland and record in the **Total** column. You do not have to count these, simply estimate the number for the wetland as a whole into one of three categories: few (< 50), moderate (51-300), and many (>300).

Species with single eggs: Are rough-skinned newt eggs present? Record yes **only** if eggs are found. Rough-skinned newts lay single eggs $\sim 1/8$ in (2-3 mm) in diameter on the stems and leaves of soft underwater vegetation. Each egg is within a jelly capsule that is only slightly larger than the egg. Newt eggs are a rich brown on top and a yellow or orange-yellow beneath. Do not spend time looking for newt eggs until surveys that are done after 15 March, as newts do not begin laying until the water is somewhat water. When searching for newt eggs, carefully examine the stems of soft vegetation, especially where leaves or side-branches join a stem as these are favorite egg deposition spots. When searching for newt eggs, do not spend a lot of time. Focus on floating or submerging soft vegetation beds, and spend no more than 15 minutes total time on a newt egg search.

[**Note:** Do not forget to record the general areas where egg masses are found on the sketch map. See **First Page** under **Sketch Map** under (7)]

Non-egg vertebrate observations: In this section, you record non-egg observations of amphibians or vertebrate species that are suspected of having some kind of significant interactions with amphibians and/or fishes. With the exception of the subsection for fish, all observations of individuals recorded involve a **count** for the entire wetland during the period of the survey. The comments line beneath each section is mostly for you to clarify unknown observations through description or to add observational items you think might be important (e.g., a great blue heron eating a northern red-legged frog on the east shore of the pond).

Amphibians: Provide a count of amphibians for the major non-egg life stages (larvae, juveniles, and adults). Larvae for salamanders always have gills, larvae of frogs or toads are tadpoles or polliwogs. Juveniles and adults of all amphibians have transformed (also termed metamorphosed) and lost their gills; juveniles have the adult body form, but are smaller. Our website has an identification guide to assist you in recognizing the different amphibians and their major non-egg life stages. If you cannot identify one or more salamanders or frogs, list your count under **unknown salamander** or **unknown frog**. If you think you saw an amphibian, but do not know whether it was a salamander or a frog, count it under **unknown amphibian**.

Birds: Observations of birds are focused on those species than prey on amphibians and fishes and involve a simple count. Try to avoid recounting individuals that you “chase” or cause to move around the wetland. Counts of many of the birds will have to be done

as you arrive, since most will spook from the vicinity of your survey area. If you see an unknown bird of potential importance, try to describe it in the **comments** cell.

Fish: Fish will be the only exception to a count when they are numerous. Count fish up to 20 individuals, otherwise categorize counts > 20 individuals into one of three categories: few (≤ 50), moderate (51-300), many (> 301). If you can identify fishes, place them into one of the three groupings (mosquitofish, sunfishes, and catfishes) we list, or other, if they do not fall into one of these groupings. If you can identify the fish and counted it other, indicate the species or group to which it belongs in the **comments** cell.

Mammals: Note mammals that eat, or influence the habitat of, amphibians and fishes. Often the sign of selected mammals will be obvious (e.g., beaver dam or tracks in mud). If you are expert at identifying the sign of these key mammals, indicate that you saw the sign of a particular species by putting an “S” next to the species name whether or not you recorded a count for that species. Treat mammal species you see other than those listed or unknowns the same as for parallel situations with birds and fishes.

End Time: Record the time at the end of your survey on a 24-hr clock.

CONGRATULATIONS, YOU ARE FINISHED!!! After completing surveys, please return completed survey forms to your team lead. Team leads should give forms to the lead for their volunteer group, who will give them to the Project Facilitator to be assigned for data entry. Individuals wanting to volunteer for data entry should contact the Project Facilitator, Merrie Diehl (360) 902-2541, e-mail: diehlmad@dfw.wa.gov.

Although we have tried to keep the form and instructions as simple to use as possible, it is only through field use that we can realize improvements. Thus, please give use feedback on what worked or did not work with the form or instructions, and we will attempt to improve it for next year's round. Any comments can be directed either to the Project Facilitator, Merrie Diehl (360) 902-2541, e-mail: diehlmad@dfw.wa.gov or the Project Research Scientist, Dr. Marc Hayes (360) 902-2567, e-mail: hayesmph@dfw.wa.gov.